भारतीय मानक

Indian Standard

IS 18262 : 2023

सूखे अनार के दाने (अनारदाना) — विशिष्टि

Dried Pomegranate Arils (*Anardana*) — Specification

ICS 67.080.10

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May 2023 **Price Group 6**

Fruits, Vegetables and Allied Products Sectional Committee, FAD 10

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Fruits, Vegetables and Allied Products Sectional Committee had been approved by the Food and Agriculture Division Council.

Dried pomegranate arils (*Anardana*) is a spice used in Indian cooking to give a sour-sweet taste to dishes. It is made from the dried seeds of pomegranate fruit (*Punica granatum*). The seeds are dried along with the pulp, either by sun-drying or other means of dehydration. They are then ground or sold in whole form. The sweet astringency of the dried seeds and pulp makes them a popular acidulant for Indian dishes. It is also thought to be medicinal and soothing to the stomach.

Anardana is a commercial product prepared from pomegranate distributed in certain pockets of Himachal Pradesh, Jammu & Kashmir, Uttarakhand and other states of the country. Formulation of Indian Standards on *Anardana* would assist in the preparation and sale of standardized, nutritious and hygienically processed products.

In the formulation of this standard, due consideration has been given to the provisions of the *Food Safety and Standards Act*, 2006 and the Rules and Regulations framed thereunder and the *Legal Metrology (Packaged Commodities) Rules*, 2011. However, this standard is subject to the restrictions imposed under these, wherever applicable.

The composition of the sectional committee responsible for formulation of this Indian Standard is listed in Annex E.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded offin accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

DRIED POMEGRANATE ARILS (*ANARDANA*) — SPECIFICATION

1 SCOPE

This standard prescribes the requirements and methods of test for dried pomegranate arils (*Anardana*).

2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouragedto investigate the possibility of applying the most recent editions of the standards listed in Annex A.

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

a) **Dried Pomegranate Arils (*Anardana*)** — It is a dried product which is obtained after drying of the pomegranate arils extracted from the pomegranate fruits.

b) **Defect** — Use of artificial colours and acidity regulators to obtain bright coloured and sour *Anardana.*

4 REQUIREMENTS

4.1 General

The product shall be obtained by drying of pomegranate arils. It shall have the following attributes:

a) Natural colour of the pomegranate;
b) Free from extraneous plant material;
c) Characteristic flavour with natural acidity; and
d) Free from added mineral compounds, colours, artificial flavours and acidity regulators; and
e) Free from spoilage.

4.2 Sulphur dioxide may be used as additive. The limits shall not exceed 2000 mg/kg when tested by the method prescribed in as per ISO 5522.

4.3 The product shall also conform to the requirements prescribed in Table 1.

4.4 The product shall not contain metallic contaminants in excess of quantities specified in Table 2.

4.5 The product shall conform to the microbiological requirements prescribed in Table 3.

4.6 Grades

The product shall comply with quality grades, designations and characteristics of *Anardana* as given in Table 4

5 PACKING AND MARKING

5.1 Packing

Anardana shall be packed in rigid or flexible food grade packaging material conforming to relevant Bureau of Indian Standard, wherever available.

5.2 Marking

Each container/package shall be marked with the following particulars:

a) Name and grade of the material;
b) Name and address of the manufacturer;
c) Net weight of the contents;
d) List of additives, if used;
e) Date of manufacturing and expiry/use by date); and
f) Any other markings required under the *Legal Metrology (Packaged Commodities) Rules*, 2011, and the *Food Safety and Standards (Packaging and Labelling) Regulation*, 2011.

5.3 BIS Certification Marking

The product may also be marked with the Standard Mark.

5.3.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations made thereunder. The details of conditionsunder which the license for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards**.**

6 SAMPLING

6.1 The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in **3** of IS 2860.

7 TESTS

7.1 The samples shall be tested for ascertaining conformity of the material to the requirements of this specification by the methods given in Table 1, Table 2 and Table 3.

Table 1 Requirements for *Anardana*

(*Clause* 4.3)

Sl No. (1)	Characteristic (2)	Requirement (3)	Method of test, Ref to (4)
i)	Moisture content, percent by mass, *Max*	10.0	Annex B
ii)	Titratable acidity, expressed as citric acid,percent by mass, *Min.*	5.0	ISO 750
iii)	Total ash, percent by mass, *Max.*	5.0	Annex C
iv)	Acid insoluble ash, percent by mass, *Max.*	1.5	IS 13846

Table 2 Limits for Metallic Contaminants in *Anardana*

(*Clause* 4.4)

Sl No. (1)	Characteristic (2)	Requirement (3)	Method of test, Ref to Clause no. of IS 2860 (4)
i)	Arsenic (as As), mg/kg, *Max*	1.10	13
ii)	Lead (as Pb), mg/kg, *Max*	2.5	14
iii)	Copper (as Cu), mg/kg, *Max*	30	15
iv)	Zinc (as Zn), mg/kg, *Max*	50	16
v)	Tin (as Sn), mg/kg, *Max*	250	17

Table 3 Microbiological Requirements for *Anardana*
(*Clause* 4.5)

Sl No.	Characteristic	Requirement				Method of Test, Ref to
		Sampling Plan [1]		Limit (cfu)		
		n	*c*	*m*	*M*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	*Salmonella*	5	0	Absent/25g	NA	IS 5887 (Part 3/Sec 1)
ii)	*Listeria monocytogenes*	5	0	Absent/25g	NA	IS 14988 (Part 1)
iii)	*E. Coli* 0157 andVero or Shiga toxin producing *E. coli*	5	0	Absent/25g	NA	IS 16987
iv)	*Vibrio cholerae*	5	0	Absent/25g	NA	IS 5887 (Part 5/Sec 1)

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1) For sampling plan *see* Annex C.

Table 4 Quality Grades of *Anardana*
(*Clause* 4.6)

Sl No.	Grades	Specifications		Colour
		Acid		
		Content (%)	Class type	
(1)	(2)	(3)	(4)	(5)
i)	Superior	> 7	High acid	Natural
ii)	Standard	7 – 6	Medium acid	Natural
iii)	Average	5 – 6	Low acid	Natural

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No./Other Publications	*Title*
IS 2860 : 1964	Methods of sampling and test for processed fruits and vegetables
IS 5887	Methods for detection of bacteria responsible for food poisoning:
(Part 3/Sec 1) : 2020/ISO 6579-1 : 2017	Horizontal method for the detection, enumeration and serotyping of Salmonella, Section 1 Detection of *Salmonella* spp. (*third revision*):
(Part 5/Sec 1) : 2023/ISO 21872-1 : 2017	Horizontal method for the determination of *Vibrio spp*., Section 1 Detection of potentially enteropathogenic *Vibrio parahaemolyticus*, *Vibrio cholerae* and *Vibrio vulnificus* (*second revision*)
IS 13846 : 2009/ISO 763 : 2003	Fruit and vegetable products — Determination of ash insoluble in hydrochloric acid (*first revision*)
IS 14988 (Part 1) : 2020/ISO 11290-1 : 2017	Microbiology of the food chain — Horizontal method for detection and enumeration of *Listeria monocytogenes* and of *Listeria spp*.: Part 1 Detection method (*first revision*)
IS 16987 : 2018 ISO/TS 13136:2012	Microbiology of food and animal feed — Real time polymerase chain reaction (PCR) based method for the detection of food borne pathogens — Horizontal method for the detection of Shiga toxin producing *Escherichia Coli* (STEC) and the determination of O157, O111, O26, O103 and O145 serogroups
ISO 750 : 1998	Fruit and vegetable products — Determination of titratable acidity
ISO 5522 : 1981	Fruits, vegetables and derived products — Determination of total sulphurdioxide content

ANNEX B

[*Table* 1, *Sl No.* (i)]

DETERMINATION OF MOISTURE CONTENT

B-1 PROCEDURE

B-1.1 Weigh accurately about 5 gm of well mixed sample in a previously dried and tared moisture dish (about 75 mm wide and 25 mm deep).

B-1.2 Place the dish in an air oven maintained at (105 ± 2) °C and dry at least for 2 h. Coolin a desiccator and weigh.

B-1.3 Repeat the process of heating, cooling and weighing until the difference between two successive reading is less than 1 mg.

B-1.4 Record the lowest weight.

B-2 CALCULATIONS

Calculate the moisture content by the following formula:

Moisture, percent by mass =

$$100 \times \frac{M_1 - M_2}{M_1 - M_0}$$

where

M_0 = weight in gm, of empty dish;

M_1 = weight in gm, of dish with material before drying; and

M_2 = weight in gm, of dish with the dried material.

ANNEX C

[*Table* 1, *Sl No.*(iii)]

DETERMINATION OF TOTAL ASH CONTENT

C-1 PROCEDURE

C-1.1 Weigh 5 gm to 10 gm sample in a silica or platinum dish (7 to 8 cm diameter), dry on a water bath, ignite on a burner and ash in a muffle furnace at 525 to 550 °C for 4 to 6 hours till a white ash is obtained.

C-1.2 Cool the dish and weigh. Keep in muffle furnace again for 1 hr, cool and weigh.

C-1.3 Note the lowest weight.

C-2 CALCULATIONS

Calculate total ash content by the following formula:

$$\text{Percent Total ash} = \frac{w_3 - w_1}{w_2 - w_1} \times 100$$

where

$W1$ = Weight of empty dish,

$W2$ = Weight of dish containing sample, and

$W3$ = Weight of dish containing ash

ANNEX D
(*Table* 3)

SAMPLING PLAN FOR MICROBIOLOGICAL REQUIREMENTS

D-1 Sampling Plan for microbiological requirements.

The terms *n*, *c*, *m* and *M* used in this standard have the following meaning:

n = Number of units comprising a sample;

c = Maximum allowable number of units having microbiological counts above m for 2- class sampling plan and between m and M for 3- class sampling plan;

m = Microbiological limit that separates unsatisfactory from satisfactory in a 2- class sampling plan or acceptable from satisfactory in a 3-class sampling plan; and

M = Microbiological limit that separates unsatisfactory from satisfactory in a 3-class sampling plan.

D-2 Interpretation of Results:

2-Class Sampling Plan (*where n, c and mare specified*)	*3-Class Sampling Plan* (*where n, c, m and M are specified*)
a) Satisfactory, if all the values observed are $\leq m$	a) Satisfactory, if all the values observed are $\leq m$
b) Unsatisfactory, if one or more of the values observed are $> m$ or more than cvalues are $> m$	b) Acceptable, if a maximum of *c* values are between *m* and *M* and the rest of the values are observed as $\leq m$
	c) Unsatisfactory, if one or more of the values observed are $> M$ or more than c values are $> m$

ANNEX D

(*Foreword*)

COMMITTEE COMPOSITION

Fruits, Vegetables and Allied Products Sectional Committee, FAD 10

Organization	*Representative*(*s*)
ICAR — Indian Institute of Horticultural Research, Bengaluru	DR DEBI SHARMA **(*Chairperson*)**
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Food Safety and Standards Authority of India, New Delhi	REPRESENTATIVE
ICAR — Central Institute for Subtropical Horticulture, Lucknow	DR NEELIMA GARG

Organization	*Representative*(*s*)
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